



What is claimed is:

1. Pulsed Electron Beam System to use for the surface modification of the metal and/or partial metal dentures. The system is consisted with an explosive emission cathode, accelerating gap formed by the cathode and plasma anode, and an electron collector where the metal and/or partial metal dentures are fixed, which are placed into a guide magnetic field. The holder of the metal and/or partial metal dentures is made with metal materials offering cooling effect to the mentioned products.
2. The process to modify the surface of the metal and/or partial metal dentures using Pulsed Electron Beam Systems, the irradiated energy should be over than  $0.1 \text{ J/cm}^2$  and the pulse repetition is lower than 100.
3. The metal and/or partial metal dentures which surface is modified using pulsed electron beam irradiation for polishing from as-cast to finished and corrosion resistance modified products.
4. Pulsed Electron Beam System to use for the surface modification of the metal and/or partial metal dentures. The system is consisted with an explosive emission cathode, accelerating gap formed by the cathode and plasma anode, and an electron collector where the metal and/or partial metal dentures are fixed, which are placed into guide magnetic field. And in the case, the amplitude of the applied voltage to the accelerating gap is below than 50 kV.
5. Pulsed Electron Beam System to use for the surface modification of the metal and/or partial metal dentures. The accelerating voltage applied to the electron gun is in pulsed mode.
6. Pulsed Electron Beam System to use for the surface modification of the metal and/or partial metal dentures. In the case, pulsed duration is in the range of 0.5 to  $10 \mu\text{s}$ . The relation is indicated as  $\tau \approx k \cdot r^2 / a$ .